CLAIMS AMENDMENTS

Please cancel claims 1-19, 25, 29-33, 49, 50, 53-66 and 68, without prejudice.

Please amend the claims as follows:

Claims 1-20 (cancelled)

21. (currently amended) An isolated nucleic acid encoding a soluble leptin receptor polypeptide which is ~~selected from the group consisting of OB-Ra, OB-Rb, OB-Rc, OB-Rd, and~~ OB-Re (SEQ ID NO:10), or allelic variants thereof.

22. (currently amended) An isolated nucleic acid encoding a leptin receptor (OB-R) polypeptide which is a soluble receptor.

Claim 23 (cancelled)

24. (currently amended) An isolated DNA molecule encoding on expression a soluble leptin receptor polypeptide selected from the group consisting of:

a. a DNA molecule of SEQ ID NO:~~1, 3, 5, 7, or~~ 9;
b. a DNA molecule complementary to the DNA molecule defined in (a);
c. a DNA molecule which hybridizes under moderate stringency conditions to the DNA molecule of (a) or (b), or a hybridizable fragment thereof which encode on expression a soluble leptin receptor;
d. a DNA molecule which is amplifiable with a polymerase chain reaction (PCR) probe selected from group consisting of a probe for clone 7 (forward primer SEQ ID NO:42 and reverse primer SEQ ID NO:43), a probe for clone 11 (forward primer SEQ ID NO:44 and reverse primer SEQ ID NO:45), and both clone 7 and clone 11; and
e. a DNA molecule that codes on expression for the soluble leptin receptor polypeptide encoded by any of the foregoing DNA molecules.

Claim 25 (cancelled)

26. (original) The DNA molecule of claim 24 which is murine.

27. (currently amended) The DNA molecule of claim 24 which codes on expression for a polypeptide selected from the group consisting of:

a) a leptin receptor selected from the group consisting of ~~OB-Ra (SEQ ID NO:2), OB-Rb (SEQ ID NO:4), OB-Rc (SEQ ID NO:6), OB-Rd (SEQ ID NO:8), and~~ OB-Re (SEQ ID NO:10), or allelic variants thereof; and

~~b) a leptin receptor selected from the group consisting of:~~

~~i. N-terminal corresponding to OB-Ra through Lys[889] and C-terminal corresponding to a C-terminal selected from the group consisting of OB-Rb after Lys[889] (SEQ ID NO:57), OB-Rc after Lys[889] (SEQ ID NO:58), and OB-Rd after Lys[889] (SEQ ID NO:59);~~

~~ii. N-terminal corresponding to OB-Rb or OB-Rc through Lys[889], and C-terminal corresponding to OB-Ra after Lys[889] (SEQ ID NO:60,61) or OB-Rd after Lys[889] (SEQ ID NO:62,63);~~

~~iii. N-terminal corresponding to OB-Rd through Lys[889], and C-terminal corresponding to OB-Ra after Lys[889] (SEQ ID NO:64), OB-Rb after Lys[889] (SEQ ID NO:65), or OB-Rc after Lys[889] (SEQ ID NO:66);~~

~~iv. N-terminal corresponding to SEQ ID NO:55 from Pro[664] to Lys[889], and C-terminal corresponding to OB-Ra after Lys[889] (SEQ ID NO:67), OB-Rb after Lys[889] (SEQ ID NO:68), OB-Rc after Lys[889] (SEQ ID NO:69), and OB-Rd after Lys[889] (SEQ ID NO:70);~~

~~v. N-terminal corresponding to SEQ ID NO:55 from Met[733] to Lys[889], and C-terminal corresponding to OB-Ra after Lys[889] (SEQ ID NO:71, OB-Rb after Lys[889] (SEQ ID NO:72), OB-Rc after Lys[889] (SEQ ID NO:73), and OB-Rd after Lys[889] (SEQ ID NO:74);~~

~~vi. N-terminal selected from the group consisting of OB-Ra, OB-Rb, OB-Rd, and SEQ ID NO:55 from Pro[664], through His[796], and OB-Re from His[796] SEQ ID NO:75,76,77 and 78);~~

~~vii. N-terminal corresponding to SEQ ID NO:55 from Met[733] to His[796], and OB-Re from His[796] (SEQ ID NO:79), and~~

~~viii.~~ iii. allelic variants of any of subparts i) through vii) above~~;~~

~~c)~~ b) a leptin receptor comprising amino acids 28-805 of SEQ ID NO:10. ~~wherein~~

~~viii. the N-terminal sequence is selected from the group consisting of~~

~~(1) amino acid residues 1-889 (SEQ ID NO:80);~~

~~(2) amino acid residues 23-889 (SEQ ID NO:81);~~

~~(3) amino acid residues 28-889 (SEQ ID NO:82);~~

~~(4) amino acid residues 133-889 (SEQ ID NO:83);~~

~~(5) amino acid residues 733-889 (SEQ ID NO:84);~~

~~(6) amino acid residues 1-796 (SEQ ID NO:85);~~

~~(7) amino acid residues 23-796 (SEQ ID NO:86);~~

~~(8) amino acid residues 28-796 (SEQ ID NO:87);~~

~~(9) amino acid residues 28-796 preceded by an N-terminal Asp-Pro dipeptide (SEQ ID NO:88);~~

~~(10) amino acid residues 133-796 (SEQ ID NO:89);~~

~~(11) amino acid residues 733-796 (SEQ ID NO:90); and~~

~~(12) allelic variants of any of subparts (1) through (10) above; and~~

~~ix. the C-terminal sequence is selected from the group consisting of~~

~~(1) SEQ ID NO:11;~~

~~(2) SEQ ID NO:12;~~

~~(3) SEQ ID NO:13;~~
~~(4) SEQ ID NO:14; and~~
~~(5) SEQ ID NO:15 after His^{796} (SEQ ID NO:91);~~
~~wherein the numbering is based on the amino acid sequence of SEQ ID NO:55.~~

28. (currently amended) An isolated nucleic acid molecule having a nucleotide sequence corresponding or complementary to the DNA sequence set forth in SEQ ID NO:~~1, 3, 5, 7 or~~ 9.

Claim 29 (cancelled)

Claim 30 (cancelled)

Claim 31 (cancelled)

Claim 32 (cancelled)

Claim 33 (cancelled)

34. (currently amended) The nucleic acid of claim 21, 22~~,~~ or 67~~-68~~ which is DNA.

35. (original) A vector comprising the DNA of claim 34.

36. (original) A vector comprising the DNA of claim 24, 27, or 28.

37. (original) An expression vector which comprises the DNA of claim 34, operatively associated with an expression control sequence.

38. (original) An expression vector which comprises the DNA of claim 24, 27, or 28, operatively associated with an expression control sequence.

39. (original) An unicellular host transformed or transfected with a DNA molecule of claim 34.

40. (original) An unicellular host transformed or transfected with a DNA molecule of claim 24, 27, or 28.

41. (original) An unicellular host transformed or transfected with an expression vector of claim 37.

42. (original) An unicellular host transformed or transfected with an expression vector of claim 38.

43. (original) The unicellular host of claim 41 selected from the group consisting of bacteria, yeast, mammalian cells, plant cells, and insect cells, in tissue culture.

44. (original) The unicellular host of claim 42 selected from the group consisting of bacteria, yeast, mammalian cells, plant cells, and insect cells, in tissue culture.

45. (original) The unicellular host of claim 43, wherein the unicellular host is selected from the group consisting of *E. coli, Pseudomonas, Bacillus, Streptomyces, Saccharomyces, Pichia, Candida, Hansenula, Torulopsis*, CHO, R1.1, B-W, LM, COS 1, COS 7, BSC1, BSC40, BMT10, and Sf9 cells.

46. (original) The unicellular host of claim 44, wherein the unicellular host is selected from the group consisting of *E. coli, Pseudomonas, Bacillus, Streptomyces, Saccharomyces, Pichia, Candida, Hansenula, Torulopsis*, CHO, R1.1, B-W, LM, COS 1, COS 7, BSC1, BSC40, BMT10, and Sf9 cells.

47. (original) A method for preparing a leptin receptor polypeptide comprising:

a) culturing a cell according to any claim 43 under conditions that provide for expression of the leptin receptor polypeptide; and

b) recovering the expressed polypeptide.

48. (original) A method for preparing a leptin receptor polypeptide comprising:

a) culturing a cell according to any claim 44 under conditions that provide for expression of the leptin receptor polypeptide; and

b) recovering the expressed polypeptide.

Claim 49 (cancelled)

Claim 50 (cancelled)

51. (original) A transgenic vector comprising a DNA molecule of claim 34.

52. (original) A transgenic vector comprising a DNA molecule of claim 24, 27, or 28.

Claim 53 (cancelled)

Claim 54 (cancelled)

Claim 55 (cancelled)

Claim 56 (cancelled)

Claim 57 (cancelled)

Claim 58 (cancelled)

Claim 59 (cancelled)

Claim 60 (cancelled)

Claim 61 (cancelled)

Claim 62 (cancelled)

Claim 63 (cancelled)

Claim 64 (cancelled)

Claim 65 (cancelled)

Claim 66 (cancelled)

67. (currently amended) The isolated nucleic acid of claim 22 wherein said soluble receptor is selected from the group consisting of

a) OB-Re (SEQ ID NO:10), or allelic variants thereof; and

b) a leptin receptor comprising amino acids 28-805 of SEQ ID NO:10. ~~an N-terminal sequence which is selected from the group consisting of:~~

~~i) OB-Ra;~~

~~ii) OB-Rb;~~

~~iii) OB-Rd; and~~

~~iv) corresponding to SEQ ID NO: 55 from Pro^{664}, through His^{796}, and a C-terminal sequence which is OB-Re from His^{796}; and~~

~~v) allelic variants of any of subparts i) through iv);~~

~~c) an N-terminal sequence which is selected from the group consisting of~~

~~i) amino acid residues 1-796;~~

~~ii) amino acid residues 23-796;~~

~~iii) amino acid residues 28-796;~~

~~iv) amino acid residues 133-796;~~

~~v) amino acid residues 733-796; and~~

~~vi) allelic variants of any of subparts i) through v); and~~

~~a C-terminal sequence which is SEQ ID NO:15;~~

~~wherein the numbering in subparts b) and c) is based on the amino acid sequence of SEQ ID NO:55.~~

Claim 68 (cancelled)